CLAIMS

What is claimed is:

1. A method of etching a substrate, comprising:

measuring a reflectance signal from a reflective material deposited on said substrate as the substrate is being etched;

correlating the substrate etch rate to the reflectance signal from the reflective material; and

using the etch relation between the substrate and the reflective material to determine the etch target.

2. The method of claim 1, wherein said substrate comprises quartz.

3. The method of claim 1, wherein said reflective material comprises metal.

4. The method of claim 3, wherein said metal comprises chrome.

5. The method of claim 3, wherein said metal is formed on a photomask formed for patterning said substrate.

6. The method of claim 3, wherein said metal has a metal oxide thereon, and wherein by correlating the substrate etch to the rate of the metal oxide etch, the reflectance signal from the metal is usable in determining an endpoint for the substrate etch.

7. The method of claim 1, wherein said reflective material comprises metal having a metal oxide thereon, and said substrate etch also etches said metal oxide on said metal, and wherein the reflectance correlation uses said metal as a secondary film only to correlate, and trigger an endpoint on the substrate as a primary film being etched,

wherein an output being monitored for endpoint detection is not physically representing a film being etched.

8. The method of claim 3, wherein a surface of said metal contains an anti-reflective metal oxide, which is attacked during the substrate etch.

9. The method of claim 1, wherein said reflective material includes a metal having metal oxide formed thereon, and wherein an output being monitored for endpoint detection does not physically represent the film being etched, such that by calculating a selectivity of the substrate to the metal, a desired substrate etch depth is translatable into one of a metal etch and a metal oxide etch depth.

10. The method of claim 9, wherein the metal oxide is not completely removed, such that a waveform of the reflectance voltage climbs linearly and such that the reflectance voltage signal is targetable to a specified metal oxide depth.

11. The method of claim 9, wherein when a certain voltage difference is observed, the etch process is discontinued.

12. A method of etching a material, comprising:

measuring a reflectance signal from a correlation material that is removed from the path of a second material that is to be etched as the second material is etched;

correlating the second material etch rate to the reflectance signal from the correlation material; and

using the etch ratio between the correlation material and the second material to determine the etch target.

13. The method of claim 12, wherein said second material comprises quartz.

14. The method of claim 12, wherein said correlation material comprises metal.

15. The method of claim 14, wherein said metal comprises chrome.

16. The method of claim 14, wherein said metal is formed on a photomask formed for patterning said second material.

17. The method of claim 12, wherein the correlation material includes a metal oxide thereon, and wherein by correlating the second material etch to the rate of the metal oxide etch, the reflectance signal from the metal is usable in determining an endpoint for the substrate etch.

18. The method of claim 12, wherein said second material etch also etches a metal oxide on said metal, and wherein a thin film reflectance correlation uses said metal as a secondary film only to correlate, and trigger an endpoint on the second material as a primary film being etched,

wherein an output being monitored for endpoint detection is not physically representing a film being etched.

19. The method of claim 14, wherein a surface of said metal contains an anti-reflective metal oxide, which is attacked during the second material etch.

20. The method of claim 12, wherein said correlation material includes a metal oxide formed thereon, and wherein an output being monitored for endpoint detection does not physically represent the film being etched, such that by calculating a selectivity of the second material to the metal, a desired second material etch depth is translatable into one of a metal etch and a metal oxide etch depth.

21. The method of claim 20, wherein the metal oxide is not completely removed, such that a waveform of the reflectance voltage climbs linearly and such that the reflectance voltage signal is targetable to a specified metal oxide depth.

22. The method of claim 12, wherein when a certain voltage difference is observed, the etch process is discontinued.

23. A method of etching a semiconductor substrate, comprising:

measuring a reflectance signal from an opaque material deposited on said semiconductor substrate as the semiconductor substrate is being etched;

correlating the semiconductor substrate etch rate to the reflectance signal from the opaque material; and

using the etch relation between the semiconductor substrate and the opaque material to determine the etch target.

24. The method of claim 23, wherein said semiconductor substrate comprises quartz.

25. The method of claim 23, wherein said opaque material comprises metal.

26. The method of claim 25, wherein said metal comprises chrome.

27. The method of claim 25, wherein said metal is formed on a photomask formed for patterning said substrate.

28. The method of claim 25, wherein said metal has a metal oxide thereon, and wherein by correlating the substrate etch to the rate of the metal oxide etch, the reflectance signal from the metal is usable in determining an endpoint for the substrate etch.

29. The method of claim 23, wherein said opaque material comprises metal having a metal oxide thereon, and said substrate etch also etches said metal oxide on said metal, and wherein the reflectance correlation uses said metal as a secondary film only to correlate, and trigger an endpoint on the substrate as a primary film being etched,

wherein an output being monitored for endpoint detection is not physically representing a film being etched.

30. The method of claim 25, wherein a surface of said metal contains an anti-reflective metal oxide, which is attacked during the substrate etch.